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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/617,975	
	Filing Date	July 12, 2003	
	First Named Inventor	David R. Payne	
	Art Unit	3671	
	Examiner Name	Raymond W. Addie	
Total Number of Pages in This Submission	68	Attorney Docket Number	2380-561

ENCLOSURES (Check all that apply)		
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Firm or Individual	Lawrence F. Grable, Esquire 101 North Robinson, Suite 1300 Oklahoma City, Oklahoma 73102
Signature	
Date	June 5, 2006

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June 5, 2006



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PATENT

Atty Dkt. No. 2380-561

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Re: Applicants: David R. Payne, Gerald A. Stangl, Norman E. Stevens, and Michael F. Gard
Serial No.: 10/617,975
Filed: July 12, 2006
For: SYSTEM AND METHOD FOR AUTOMATICALLY DRILLING AND BACKREAMING A HORIZONTAL BORE UNDERGROUND
Art Unit: 3671
Examiner: Raymond W. Addie

Dear Commissioner:

This is in response to the Notice of Non-Compliant Appeal Brief (37 CFR 41.37) mailed May 15, 2006. In response thereto, an Appellants' Amended Brief ("Brief") in compliance with 37 CFR § 41.37 is submitted herewith. The Brief contained herein contains no new matter.

Additionally, the fee payment in the amount of \$500.00 for a large entity for filing a brief in support of an appeal pursuant to 37 CFR § 41.20(b)(2) was originally submitted on June 17, 2005.

In view of these changes, Applicants respectfully submit that the application is now in condition for allowance.

This is intended to be a complete response to the Notice of Non-Compliant Appeal Brief mailed May 15, 2006.

Respectfully submitted,

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appellants: David R. Payne, Gerald A. Stangl,
Norman E. Stevens, Jr., and Michael F. Gard

Serial No.: 10/617,975

Filed: July 12, 2003

For: SYSTEM AND METHOD FOR
AUTOMATICALLY DRILLING
AND BACKREAMING A
HORIZONTAL BORE
UNDERGROUND

Group No.: 3671

Examiner: Raymond W. Addie

Att'y Dkt. No. 2380-561

Date: June 5, 2006

APPELLANTS' AMENDED BRIEF

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TABLE OF CONTENTS

	<u>PAGE</u>
I. REAL PARTY IN INTEREST.....	1
II. RELATED APPEALS AND INTERFERENCES.....	1
III. STATUS OF CLAIMS	1
IV. STATUS OF AMENDMENTS	1
V. SUMMARY OF CLAIMED SUBJECT MATTER	1
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	2
VII. ARGUMENT	2
(i) 35 U.S.C. § 112, First Paragraph Rejections.	2
(ii) 35 U.S.C. § 112, Second Paragraph Rejections.	2
(iii) 35 U.S.C. § 102 Rejections.....	2
(iv) Rejection under 35 U.S.C. § 103 over U.S. Patent No. 5,833,015 in view of U.S. Patent No. 6,308,787.	2
A. The combination of Hesse and Alft cannot support a <i>prima facie</i> showing of obviousness because they do not enable one skilled in the art to use the claimed method.	2
1. Summary of the Examiner's Rejections.	2
2. Appellants' Invention	3
3. Hesse does not disclose automatically reducing a length of the drill string as required in Appellants' claim 4.....	4
4. Alft does not teach how to automatically reduce the length of a drill string.....	5
5. Claims 5-12 are patentable over Hesse and Alft.....	6
VIII. CONCLUSION.....	7
Appendix 1: Claims on Appeal	
Appendix 2: Evidence	
Appendix 3: Related Proceedings	
ATTACHMENT A: Office action dated January 21, 2005.	



I. REAL PARTY IN INTEREST

The real party in interest in this application is The Charles Machine Works, Inc. ("CMW"), an Oklahoma corporation having a principal place of business at 1959 W. Fir Avenue, Perry, Oklahoma 73077. CMW is the sole owner by assignment of the instant application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

III. STATUS OF CLAIMS

Claims 1-3 are withdrawn.

Claims 4-12 are rejected and being appealed.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection of the claims of this application. Appellant understands the claims to read as they did on January 1, 2005, the mailing date of the final Office action. No amendments were put forth by Appellants in their March 10, 2005, Response to Final Office Action Mailed January 21, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 4 of the present invention is directed to a method for automatically backreaming a horizontal borehole. The method comprises automatically rotating and pulling (2002) a drill string (22) having a backreamer (24) through the horizontal borehole and automatically reducing a length of the drill string (2008). Page 34, lines 5-17. The method also comprises automatically reducing a rate of pullback (2014) if a rotation pressure on the drill string is greater than a predetermined limit (2012). Page 34, lines 18-21. Further, the method comprises automatically reducing the rate of pullback (2026) if a rotation speed of the drill string is less than a predetermined limit (2028). Page 35, lines 5-12. Claims 5-12 depend from claim 4.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Are claims 4-12 unpatentable under 35 U.S.C. § 103(a) as rendered obvious by the combination of U.S. Patent No. 5,883,015, issued to Hesse et al. and U.S. Patent No. 6,308,787, issued to Alft?

VII. ARGUMENT

(i) 35 U.S.C. § 112, First Paragraph Rejections.

This appeal concerns no § 112, first paragraph rejections.

(ii) 35 U.S.C. § 112, Second Paragraph Rejections.

This appeal concerns no § 112, second paragraph rejections.

(iii) 35 U.S.C. § 102 Rejections.

This appeal concerns no § 102 rejections.

(iv) Rejection under 35 U.S.C. § 103 over U.S. Patent No. 5,833,015 in view of U.S. Patent No. 6,308,787.

The Examiner rejected claims 4-12 under § 103(a), as being unpatentable over Hesse et al. (U.S. 5,833,015) in view of Alft (U.S. 6,308,787). Appellants submit that claims 4-12 are patentable over the cited prior art and the Examiner's rejection is without merit.

A. The combination of Hesse and Alft cannot support a *prima facie* showing of obviousness because they do not enable one skilled in the art to use the claimed method.

1. Summary of the Examiner's Rejections.

The Examiner rejected claims 4-12 under 35 U.S.C. § 103(a) as rendered obvious by U.S. Patent No. 5,833,015, issued to Hesse et al. ("Hesse") in view of U.S. Patent No. 6,308,787 issued to Alft ("Alft"). Reversal of the § 103(a) rejection in view of Hesse and Alft is respectfully requested.

As the basis for these rejections, the Examiner has relied on Hesse in combination with Alft to support a claim of obviousness. To make a claim of obviousness, the Examiner has a burden of establishing a *prima facie* case of obviousness. M.P.E.P. 2142. To establish a *prima facie* case of obviousness, the prior art reference(s) must teach or suggest all of the claim

limitations. M.P.E.P. 2143. The prior art references must also be enabling so that one skilled in the art can make and use the apparatus or method. See Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551, 13 U.S.P.Q.2d 1301, 1304 (Fed. Cir. 1989) and Ex Parte Ronald H. Nelson et al., 2000 WL 33534688 (Bd.Pat.App & Interf.). In the present case, the references relied upon by the Examiner do not enable one skilled in the art to make and use the apparatus or method. The Hesse patent does not disclose how to automatically reduce a length of the drill string, and the Alft patent does not enable one of ordinary skill to do so. Thus, a *prima facie* case of obviousness as to claim 4 has not been made and the § 103(a) rejection must be overturned.

2. Appellants' Invention

Independent claim 4 is directed to a method for backreaming a horizontal borehole. The method comprises automatically rotating and pulling a drill string (22) having a backreamer through the horizontal borehole (2010). The method of claim 4 also comprises the step of automatically reducing a length of drill string (22). The method further comprises automatically reducing a rate of pullback (2012) if a rotation pressure on the drill string is greater than a predetermined limit (2014). Further still, the method comprises automatically reducing the rate of pullback (2026) if a rotation speed of the drill string is less than a predetermined limit (2028).

Accordingly, the preferred method of the present invention is directed to a horizontal directional drilling (hereinafter "HDD") backreaming operation. In a typical HDD operation a pilot borehole is created by pushing a drill bit horizontally through the ground. The drill bit is supported at the end of a string of drill pipe sections. The drill string is generally made up of individual drill pipe sections connected end to end. As the drill bit is pushed through the ground, drill pipes are added, or "made up," one by one to extend the length of the drill string. The make-up operation consists of connecting the box joint of a pipe section to the pin

joint of a similarly constructed drill pipe. When the drill bit reaches its destination point the pilot boring operation is completed and the backreaming operation may begin.

To begin the reaming operation, the operator removes the drill bit from the end of the drill string and connects a backreamer in its stead. The backreamer is pulled back through the borehole to enlarge the pilot bore for installation of a utility line or product pipe. Appellants' invention requires the operator to establish a predetermined rotation pressure limit and a predetermined rotation speed of the drill string for the backreaming operation. These limits are based upon factors such as soil composition, bend radius of the drill pipe, and elasticity of the utility line or product pipe being pulled into the borehole behind the backreamer.

After the limits for rotation pressure and speed have been established, automatic pullback and rotation of the drill string and backreamer through the horizontal borehole is started. As the drill string is pulled back through the borehole it becomes necessary to remove pipe sections from the drill string. Appellants' method automatically removes a length of drill pipe from the drill string without the need for operator intervention. Appellants' method also includes the steps of automatically reducing the rate of pullback if the rotation pressure on the drill string is greater than the predetermined limit; and automatically reducing the rate of pullback if the rotation speed of the drill string is less than the predetermined limit. Each step of Appellants' method is automatic and does not require operator intervention.

3. Hesse does not disclose automatically reducing a length of the drill string as required in Appellants' claim 4.

Hesse is directed to a system for monitoring the pulling force exerted on a product being pulled into the borehole behind a backreamer. Hesse teaches using the measurement of tension force on a product pipe to control forward advance and rotational speed of the expansion drill bit. See Hesse, col. 4, ll. 18-22. Hesse also teaches that the tension force measurements can be used by an automatic control of drive (1) to control the advance and rotation speed of the drill bit. See *id.* at 23-25. However, as noted by the Examiner, Hesse does not teach automatically

reducing the length of the drill string, as required by Appellants' claim 4. See Examiner's Action mailed July 2, 2004, at 3.

4. Alft does not teach how to automatically reduce the length of a drill string.

As discussed above, the Examiner recognized that Hesse does not teach automatically reducing a length of the drill string, and cited the Alft patent as teaching that missing feature. See Examiner's Action mailed July 2, 2004, at 3. However, Alft does not enable one skilled in the art to automatically reduce a length of drill string.

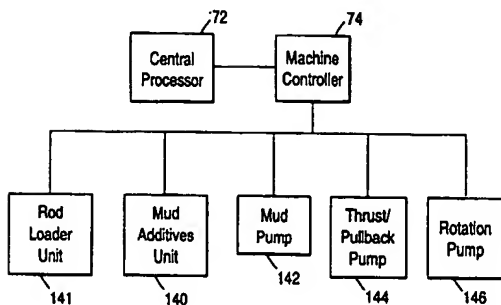


Fig. 7

The Alft patent describes an HDD system having a drilling machine, a drill string, a drive system, a plurality of sensors, and a central processor. With reference to Figure 7 of Alft, Alft teaches that a central processor (72) sends control signals to a machine controller (74). The machine controller (74) purportedly controls operation of a rod loader

unit (141). The rod loader unit (141) is used to control an automatic rod loader apparatus. However, Alft does not teach how to automatically reduce a length of drill string because it does not teach the sensors or control logic needed to process information from the sensors and activate the mechanical devices used to reduce a length of drill string. With regard to the rod loader unit 141, Alft states only:

A pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations

The machine controller 74 also controls rotation pump movement when threading a length of pipe onto a drill string 180, such as by use of an automatic rod loader apparatus of the type disclosed on commonly assigned U.S. Pat. No. 5,556,253 [the Rozendall Patent], which is hereby incorporated by reference in its entirety.

See Alft, col. 30, ll. 30-32 and 56-61. Alft's mere desire to automatically reduce a length of drill string does not make it enabling for such purpose and cannot render Appellants' claims obvious. Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 381 F.3d 1371 (Fed. Cir. 2004) (recognition of a problem to be solved by a reference does not render the solution obvious). Because Alft does not solve the problem of how to automatically reduce a length of drill string, one skilled in the art would not consult this reference.

The Rozendall Patent, incorporated by reference in Alft, does not cure the failings of Alft. Alft incorporated U.S. Patent No. 5,556,253, issued to Rozendall, by reference to teach the use of an automatic rod loader apparatus. Alft, col. 30, ll. 56-61. Rozendall is directed to an automatic pipe loading device (24) which includes a magazine (26) containing a plurality of pipes. See Rozendall, col. 2, ll. 48-50. Rozendall describes only the mechanical device used to load and unload pipes. Rozendall allows the operator to load pipe sections without requiring the operator to physically pick-up and load the pipe onto the machine. However, the operator still must operate levers and controls that assist the operator to perform the steps of loading the pipe. Rozendall does not describe a controller or automatic controls that automate the pipe-handling process so that the need for operator interaction is eliminated. Like Alft, one skilled in the art would not consult Rozendall to learn how to automatically reduce a length of the drill string.

Because the Examiner failed to provide a reference that one of skill in the art would consult to solve the problem of automatically reducing a length of drill string, the Examiner has failed to make a *prima facie* showing of obviousness. Consequently, the § 103(a) rejection of claim 4 must be overturned.

5. Claims 5-12 are patentable over Hesse and Alft.

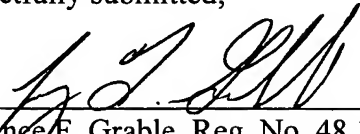
Claims 5-12 all depend directly or indirectly from claim 4 and they should be allowed when claim 4 is allowed. Each of these dependent claims includes the patentable features of claim 4. As claim 4 has been demonstrated to be patentable over the combination of

Hesse and Alft, then dependent claims 5-12 are likewise patentable. Consequently, the § 103(a) rejection of claims 5-12 must be overturned.

VIII. CONCLUSION

Appellants respectfully requests the Board overturn the rejections of claims 4-12, under 35 U.S.C. § 103(a), and that a notice of allowance be issued.

Respectfully submitted,



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Appendix 1

CLAIMS ON APPEAL

- 5 4. A method for backreaming a horizontal borehole, the method comprising:
automatically rotating and pulling a drill string having a backreamer through the
horizontal borehole;
automatically reducing a length of the drill string;
automatically reducing a rate of pullback if a rotation pressure on the drill string is
greater than a predetermined limit; and
automatically reducing the rate of pullback if a rotation speed of the drill string is
less than a predetermined limit.
5. The method of claim 4 further comprising attaching a utility line to the
backreamer.
6. The method of claim 5 further comprising automatically recording the
actual location of the utility line as the utility line is automatically pulled through the borehole.
7. The method of claim 4 further comprising increasing the rate of pullback
if the rotation pressure is less than the predetermined limit, the rotation speed of the drill string is
greater than a predetermined limit, and the product tension at the backreamer is less than a
predetermined limit.
8. The method of claim 7 wherein the rate of pullback is increased by five
percent if the rotation pressure is less than the predetermined limit, the rotation speed of the drill
string is greater than the predetermined limit, and the product tension at the backreamer is less
than the predetermined limit.
9. The method of claim 4 wherein the rate of pullback is reduced by twenty
percent if the rotation pressure is greater than the predetermined limit.

10. The method of claim 4 wherein the rate of pullback is reduced by ten percent if the rotation speed of the drill string is less than a predetermined limit.

11. The method of claim 4 further comprising automatically reducing a rate of pullback if the rotation speed of the drill string is within a predetermined range and a product tension at the backreamer is greater than a predetermined limit.

12. The method of claim 4 wherein the step of automatically reducing a length of the drill string comprises automatically removing a pipe section from the drill string.

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NONE

Appendix 2

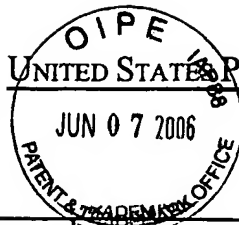
EVIDENCE



Appendix 3

RELATED PROCEEDINGS

NONE



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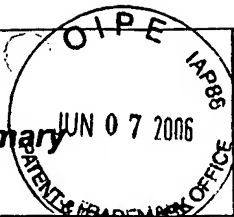
APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,975	07/12/2003	David R. Payne	82380-00664 00561	4897
28839 7590 01/21/2005				
MCKINNEY & STRINGER, P.C. 101 N. ROBINSON OKLAHOMA CITY, OK 73102				
			EXAMINER ADDIE, RAYMOND W	
			ART UNIT 3671	PAPER NUMBER

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ATTACHMENT "A"

Office Action Summary



Application No.

10/617,975

Applicant(s)

PAYNE ET AL.

Examiner

Raymond W. Addie

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesse et al. # 5,833,015 in view of Alft # 6,308,787 B1.

Hesse et al., discloses a method for drilling and backreaming a horizontal bore hole, the method comprising:

Automatically rotating and pulling a drill string (3), having a backreamer (5) through the horizontal borehole.

Automatically reducing a rate of pullback if a rotation pressure on the drill string is greater than a predetermined limit.

Automatically reducing the rate of pullback if a rotation speed of the drill string is less than a predetermined limit.

Increasing the rate of pullback if the rotation pressure is less than the predetermined limit, increasing the rotation speed of the drill string is greater than a predetermined limit, and the product tension at the backreamer (24) is less than a predetermined limit.

Attaching a utility line(8) to the backreamer after the boring tool (26) has exited the earth at location (24).

See Hesse et al. Col. 3, ln. 50-col. 5, ln. 23.

What Hesse et al. does not disclose is automatically reducing the length of the drill string.

However, Alft teaches a method of operating a horizontal boring machine having an automated drill string (22), which can be lengthened or shortened automatically or manually, by removing a pipe section from the drill string, either automatically or manually. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of forming a bore hole, of Hesse et al., with the method of automatically lengthening or shortening the drill string when the drill string needs to be lengthened or shortened, as taught by Alft et al., in order to maximize boring efficiency. See Alft col. 12, lns 5-20.

In regards to claim 6, Hesse et al. discloses it is desirable to pull a utility line through a borehole, by attaching the utility line (8) to a drill head (5), and to transmit operational data from the bore head to the drilling machine to maximize boring efficiency. What Hesse et al. does not disclose is recording the actual location of the utility line as the utility line is automatically pulled through the borehole via a transmission line disposed within the drill string.

However, Alft discloses it is known to track the position of a drill head (24) in real time, using a sonde-type transmitter and remote control unit that uses a traditional methodology for locating the drill head. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of backreaming a borehole of Hesse et al. with the method of tracking the drill head, as taught by Alft, in order to continuously determine and record the location of the utility line, connected to the drill head. See col. 12, Ins.10-41, col. 16, Ins. 16-29.

In regards to Claims 8-11 although neither Hesse et al., nor Alft explicitly recite reducing the rate of pullback of the drill string by a certain percentage; both Hesse et al., and Alft does disclose that the rate of pull-back can be reduced or terminated based upon whether the rotation speed, rotation pressure(torque) of the drill string, or the product tension (lubricating mud pressure) is above or below a pre-determined level. Hence, it would be obvious that the amount of reduction required could be correlated to a specific percentage of the current rate of pull back of the drill string. See col. 44.

Response to Arguments

2. Applicant's arguments filed 11/05/04 have been fully considered but they are not persuasive.

Applicant argues in favor of Independent Claim 4 by stating "Each step of the method claim requires automatic operation of the step, without human intervention".

Art Unit: 3671

Applicant then suggests "The Hesse reference...also mentions the measurements could be provided to an automatic control, but the reference lacks any disclosure of structure for an automatic control device or how to automatically control the drive...the Hesse reference also does not disclose automatically reducing the length of the drill string, as is required by Applicants' present invention".

Applicant then suggests "Alft broadly suggests that the processor may operate parts of the drilling system...Alft does not, however, adequately describe or teach the operation of the processor to control a pipe handling system to automatically reduce the length of the drill string when the drill string must be shortened".

Applicant then states "Alft also states the machine controller 74 also controls rotation pump movement when threading a length of pipe onto a drill string 180 such as by use of an automatic rod loader apparatus of the type disclosed in commonly assigned U.S. Patent No. 5,556,253, which is hereby incorporated herein by reference in its entirety".

However, the Examiner does not concur.

An incorporation by reference in the arguments is not afforded the same benefit as an incorporation by reference in the specification. Applicant's specification does not incorporate 5,556,253 to Rozendaal et al.

Further, if the reference were incorporated by reference, and the reference does not teach "a controller or any automatic control" as argued, it is unclear as to how Applicants' method is performed by Applicant invention.

Applicant's further incorporation by reference of U.S. Patent No. 6,179,065 also

is made only in the arguments and not in the specification, and hence is not afforded the same benefit.

Further, Applicant's admission that "Alft broadly suggests that the processor may operate parts of the drilling system...Alft state 'a pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations...See col. 30, Ins. 30-32"; clearly shows Alft reasonably suggests automatic control of shortening the drill string by unthreading adjoined drill string sections. Hence, it is obvious the combined teachings of Hesse in view of Alft teach a method of automatically backreaming a horizontal borehole including the step of automatically reducing a length of the drill string by automatically removing a pipe section from the drill string by unthreading adjoined drill string sections.

Therefore the argument is not persuasive and the rejection is maintained.

Applicant then argues in favor of dependent claims 5-11 by indicating that they "depend from claim 4 and include all the limitations thereof...these claims are also allowable over Hesse and Alft and the rejection of claims 5-11 should also be withdrawn".

However, the Examiner does not concur because; Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond W. Addie whose telephone number is 703 305-0135. The examiner can normally be reached on 8-2, 6-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 703 308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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RWA
1/18/05